supported in through holes in the upper plate, the lower plate and the pin holding member, the method comprising:

inputting image information;

developing pixel information from the image information in accordance with the number of tactile pins;

binarizing the pixel data into on/off data;

driving the movable unit to move both horizontally and vertically;

driving the actuators based on the binarized pixel data to raise appropriate tactile pins, whereby an image is displayed as concavities and convexities on the display board portion.

15. The tactile display apparatus according to claim 4, wherein the display board portion is attached to a top surface portion of a case body of the tactile display apparatus in such a manner that the display board portion by itself can be freely attached to and detached from the case body from outside.

16. The tactile display apparatus according to claim 5, wherein the tactile pins are formed by attaching tactile dot parts, which are formed by spring pins, to the tip end portions of main pin parts.

17. The tactile display apparatus according to claim 6, wherein the actuation pins which move forward or backward as the actuators operate are disposed at said movable unit, the tactile pins protrude as the actuation pins move forward, the actuation pins move away from the tactile pins when retracting, and the actuation pins move forward or backward while the movable unit moves.

18. The tactile display apparatus according to claim 8, wherein the movable unit is supported for free vertical movements via a vertical movement mechanism by a cradle which is supported for free horizontal movements via a horizontal movement mechanism by the case body of the tactile display apparatus.

19. The tactile display apparatus according to claim 9, wherein the movable unit moves horizontally beyond the range in which the actuators control the projected or retracted position of each tactile pin of said tactile pins, and the movable unit moves vertically while moving horizontally beyond the range in which the projected or retracted positions of the tactile pins are controlled.

20. The tactile display apparatus according to claim 10, wherein the vertical movement mechanism of the movable unit comprises an actuating member which moves horizontally and integrally with the movable unit, a fixed member which is fixed to the case body side of the tactile display apparatus, and a one-way clutch mechanism which moves the movable unit vertically in association with interference of the actuating member moving horizontally with the fixed member.

21. The method according to claim 14, wherein driving the movable unit comprises:

moving the movable unit horizontally in a reciprocating manner; and

moving the movable unit vertically a predetermined distance after each horizontal reciprocal movement.

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